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Did the first Covid-19 national lockdown lead to an increase in domestic abuse in London?

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Abstract

On March 23rd 2020, the UK, following close behind a number of other countries went into its first national lockdown in a bid to stop the spread of Covid-19. Boris Johnson told people to stay at home and save lives. But what happens when home isn't safe? This paper uses data from the Metropolitan Police to examine the impact of the first lockdown on domestic abuse in the 32 boroughs of the London Metropolitan area. Using a before and after approach, and controlling for other factors, we show that domestic abuse crimes rose during lockdown. We find this increase is greater for some crimes and populations than others and is consistent across the whole lockdown period. Once lockdown restrictions are eased, rates decline but remain slightly higher than prior to lockdown up to 3 months later

Keywords: Lockdown, Domestic abuse, victimisation, London

JEL Codes: B41 B55 C01 C12 C25 J12 K42

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Introduction

When Boris Johnson addressed the nation on 23rd March 2020 to tell viewers the country was going into lockdown, it became one of the top 10 most watched broadcasts in history, attracting 27.5 million viewers (Duncan, 2020). The restrictions put in place meant that people could only leave their homes to shop for basic necessities, as infrequently as possible, exercise for up to an hour a day and only travel to work if their job could not be conducted from home. Non-essential shops were forced to close, any social events or gatherings (such as weddings, christenings or birthdays) were banned, schools were shut and sports events cancelled. These restriction were set in place in the UK, along with other countries,³ to stop the spread of Covid-19, which by March 23rd had already claimed 335 lives in the UK. These restrictions stayed in place for 7 full weeks of lockdown, until conditions were eased on May 10th when people were allowed to return to work and take unlimited exercise, and finally lockdown restrictions were fully lifted on June 15th when non-essential shops and primary schools were re-opened.

While this measure was designed to save lives and alleviate pressure on the National Health Service (NHS) there was little or no discussion at this stage of the effect this confinement would have on domestic abuse, despite the fact that existent evidence shows domestic abuse tends to increase when families spend more time together (like Christmas (Taub, 2020)) and in stressful situations (Flynn and Graham, 2020). In the 12 months ending March 2019, there were an estimated 2.4 million adults in UK, who were victims of domestic

³ Other countries that has already instituted national lockdown include Italy (March 10th), Spain (March 14th), France (March 16th), Belgium (March 17th), Argentina (March 21st).

abuse (ONS, 2019). For these people home is far from a safe place and often the freedom of leaving home to go to work or visit family and friends is an escape from their abuser (Mitchell and Hodson, 1983).

This paper uses data from the Metropolitan Police for the whole of the Metropolitan area of London to examine what happened to domestic abuse in London before and after the first Covid-19 national lockdown and beyond. Controlling for a range of factors that might affect our relationship of primary interest we show that the national lockdown did lead to an increase in domestic abuse. This increase is fairly consistent across the lockdown period, only declining once lockdown restrictions are eased. However, we find the increase is heterogeneous across different populations within London: with females, those aged 21 and under and over 70 and those from Asian, Arab or Middle Eastern ethnicities experiencing the highest increases in domestic abuse over the lockdown period. Additionally, we find that domestic abuse levels remain slightly higher than prior to lockdown up to 3 months after lockdown restrictions are lifted.

Background

Domestic abuse can be committed by both men and women and is defined as “an incident or pattern of incidents of controlling, coercive, threatening, degrading and violent behaviour” (Woman’s Aid, 2020). It is used as an umbrella term, capturing all domestic violence within the family and inter-partner violence. It is estimated that around 40,000 calls were made to Domestic Violence charities in the initial three months of lockdown, which is believed to be almost an 80 percent increase to the norm (Kelly and Graham, 2020).

Newspapers were reporting that other countries were also seeing increases in

domestic abuse including Brazil, Belgium and Italy (Graham-Harrison et al., 2020) and that this was a global occurrence (Gulland et al., 2020).

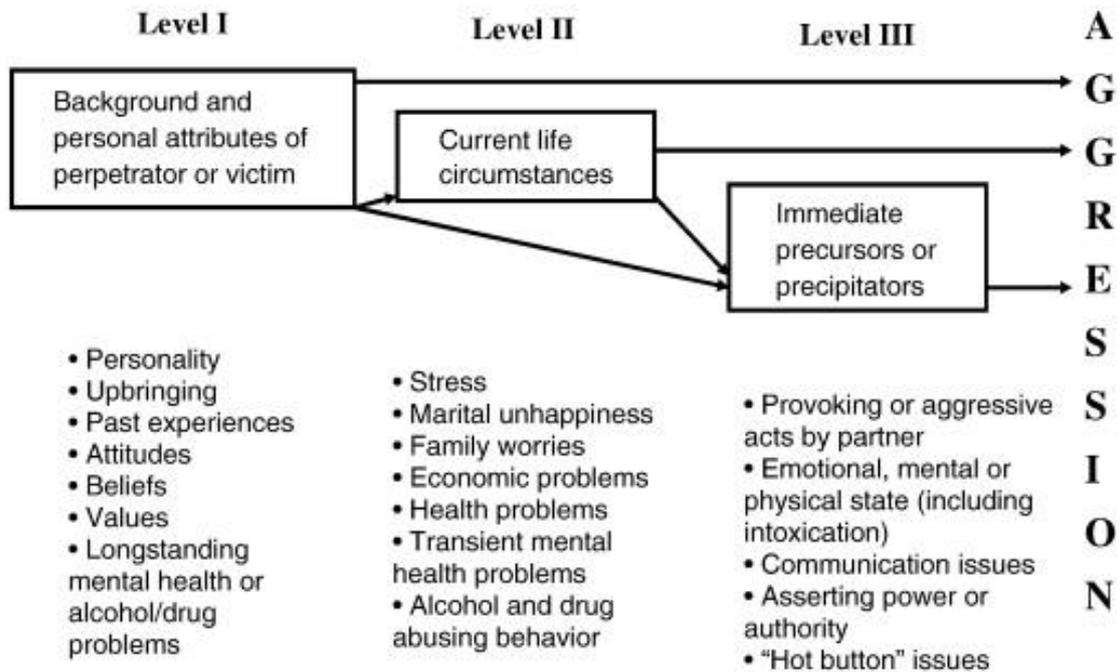
Such concerns led a number of people to speak out about a potential link between lockdown and an increase in domestic abuse prior to the UK going into lockdown. Indeed, a statement made by Dr Hans Kluge the director of the World Health Organisation (WHO) European region on March 4th 2020, 19 days before the UK went into lockdown, talked about increases in domestic abuse and violence against women occurring across Europe as women are forced to “lockdown” at home with their abusers. At the same time, he acknowledged that access to services was being disrupted due to Covid, with shelters either full, repurposed for Covid reasons or closed.

Armed with evidence from countries that entered lockdown before the UK, the New York times reported they contacted the UK Home Office 10 days prior to lockdown to ask what the UK were going to do about domestic violence. Domestic abuse charities sent an open letter to Parliament stating that emergency measures will need to be put in place to combat the rise in domestic abuse (Parliament publication, 2020). And on April 5th 2020, António Guterres, the Secretary General of The United Nations, wrote a Tweet calling for ‘governments to put women’s safety first as they respond to the pandemic’.

To help us think about why lockdown may lead to an increase in domestic abuse we can draw on the work of Flynn and Graham (2010) who, from their systematic review of the domestic abuse literature, categorise the reasons for domestic abuse into 3 levels, which are illustrated below. Level 1 relates to background and personal attributes; Level 2 to current life circumstances and Level 3 to immediate precursors or precipitators. Level 2 is

fundamental to this research because all of the drivers of what Flynn and Graham (2010) refer to as life circumstances, including health, finances, physical and mental wellbeing and marital and family worries are likely to be negatively affected by Covid-19 and lockdown.

Conceptualisation levels of explanations why domestic abuse occurs



Source – (Flynn and Graham, 2020: 242)

With some cross over with Flynn and Graham’s level II factors, Peterman et al. (2020) offer a pathway model that directly addresses how pandemics might affect violence against women and children. They suggest a 9 path model that includes: (1) economic insecurity and poverty-related stress, (2) quarantines and social isolation, (3) disaster and conflict-related unrest and instability, (4) exposure to exploitative relationships due to changing demographics, (5) reduced health service availability and access to first responders, (6) inability of women to temporarily escape abusive partners, (7) virus-specific sources of

violence, (8) exposure to violence and coercion in response efforts, and (9) violence perpetrated against health care workers.

Informed by both of these typologies we can see how lockdown restrictions, which confine people to the same household space, could exacerbate existing conflicts or even create conflict where none existed between household members: increasing family stress, which even without lockdown has been cited as a key motivator behind domestic abuse (Cascardi and Vivian, 1995). Previous health emergencies, including the 2003 SARS outbreak have been associated with increased anxiety, mental and physical health problems including post-traumatic stress, depression and even suicide attempts (Peterman et al., 2020), with quarantines and social isolation identified as possible contributing factors (Lau et al., 2005; Reissman et al., 2006; Yeung and Fung, 2007; Mak et al., 2009).

In addition, Covid-19 quickly changed the economic environment for families, with increasing financial insecurity and financial related stress, factors which are known predictors of domestic abuse (Vivian 1995; Cascardi and Raphael, 2000; Benson et al., 2003). During the spring and summer months of 2020 estimates from the Office of National Statistics (ONS) show that around 7.5 million people, more than a quarter of the workforce, were temporarily away from work during the lockdown period (ONS, 2020): By July 2020 Universal Credit claims⁴ had risen by around 117% to 2.7 million; regular nominal pay had fallen for the first time since records began in 2001; and business' had secured government-backed loans of almost £52bn with 9.6 million workers' pay

⁴ -This covers those claiming benefits low income and unemployment.

supported through the Job Retention Scheme (Sky News, 2020; Statistica Accounts, 2020).

When thinking about the impact of the Covid-19 lockdown on domestic abuse we can draw on evidence from work that examines the aftermath of natural disasters (including hurricanes, tsunamis, floods, wildfires and volcano eruptions). This literature fairly consistently shows that any major event that puts a restriction on people and places is associated with an increase in domestic abuse and violence (Dobson, 1994; Fothergill, 1998; Chew and Ramdas, 2005; Klein, 2008; Anastario et al., 2009; Weitzman and Behrman, 2016; Schwefer, 2018; Bermudez et al., 2019; Castañeda Camey et al., 2020). In particular, the findings show that those most affected tend to be women, children and other vulnerable people (Phillips et al., 2009): Disproportionally victims of domestic abuse in general, increases in times of crisis affect these groups more than others (Phillips et al., 2009; Dasgupta et al., 2010).

Peterman et al. (2020) offer the most timely and comprehensive review of the current thinking about pandemics and violence and highlight a number of areas where research voids exist. Firstly, they call for more information on the size of the problem and analyses of how rates vary by the nature and location of the pandemic. They also highlight a need for more information on how different types of violence respond, which populations are most at risk of rises in violence during pandemics, and how this maps to existing social inequalities including sex, age and race (Peterman et al. (2020).

Early empirical evidence on the impact of Covid-19 social restrictions and lockdown policies on domestic abuse primarily address Peterman et al.'s (2020) first point about assessing the size of the problem. With a number of studies

showing positive relationships between social restrictions and domestic abuse calls and crimes in different locations around the world.⁵ For example in a study of 14 large US cities Leslie and Wilson (2020) and McCrary and Sanga (2020) find around a 10 percent increase in domestic abuse calls. Boserup et al. (2020) use police data from 4 US cities and show increases of between 10 to 27 percent during lock down periods compared to the weeks prior to lockdown. Bullinger et al. (2020) find that lockdown led to an increase in domestic violence-related calls to the police in Chicago. Outside of the US, Ravindran and Shah (2020) show that domestic abuse increased in India in areas with stricter lockdown rules. Likewise, in Peru, Aguero (2020) finds an increase in calls to the national helpline for domestic violence in states with stricter lockdown policies. In Argentina, Gibbons et al. (2020) and Perez-Vincent and Carreras (2020) show increases in calls about domestic violence during the imposition of social restrictions: While in Mexico City, Silverio-Murillo and Balmori de la Miyar (2020) show that during the lockdown calls requesting psychological services for intimate partner violence increased.

Ivandic et al. (2020) present evidence from the UK using similar data covering the London Metropolitan area that we use in the present study. Addressing what Peterman et al. (2020) referred to as a need for information on how different types of violence respond to pandemics they show that during the Covid-19 lockdown patterns of abuse vary significantly by the type of perpetrator: With lockdown leading to a rise in abuse by current partners and

⁵ A few studies find no significant increase in domestic abuse over the lockdown period. These include Campedelli et al. (2020) for Los Angeles, US, Piquero et al. (2020) for Dallas, US, Payne and Morgan (2020) for Queensland, Australia.

family members of 8 percent and 17 percent but a decrease of 11 percent in abuse by ex-partners.

Building on this evidence our current paper explores the impact of the first national lockdown in the UK on domestic abuse in the Metropolitan area of London. Using a before and after methodological approach we examine the probability of being a victim of domestic abuse in the months before and after lockdown. Setting up various different before periods and a placebo test using the same time frame but in the year before lockdown, when no lockdown was in place, our methodology allows us to better attribute any changes in domestic abuse to the impact of lockdown. We then go on to examine the crimes and populations which saw the highest increases in domestic abuse over the lockdown period before turning our attention to look at what happens after lockdown using an event study approach.

This research addresses all of the key areas Peterman et al (2020) highlighted as currently lacking in empirical evidence. We are able to say something about the size of the problem in London, showing how the probability of being a victim of domestic abuse varies before, during and after lockdown. We are also able to say something about how the relationship between lockdown and domestic abuse varies by different types of population, showing the groups most at risk of domestic abuse during lockdown and how these map onto existing inequalities. And finally, we can talk about whether domestic abuse varies across the duration of lockdown and what happens after lockdown has been eased.

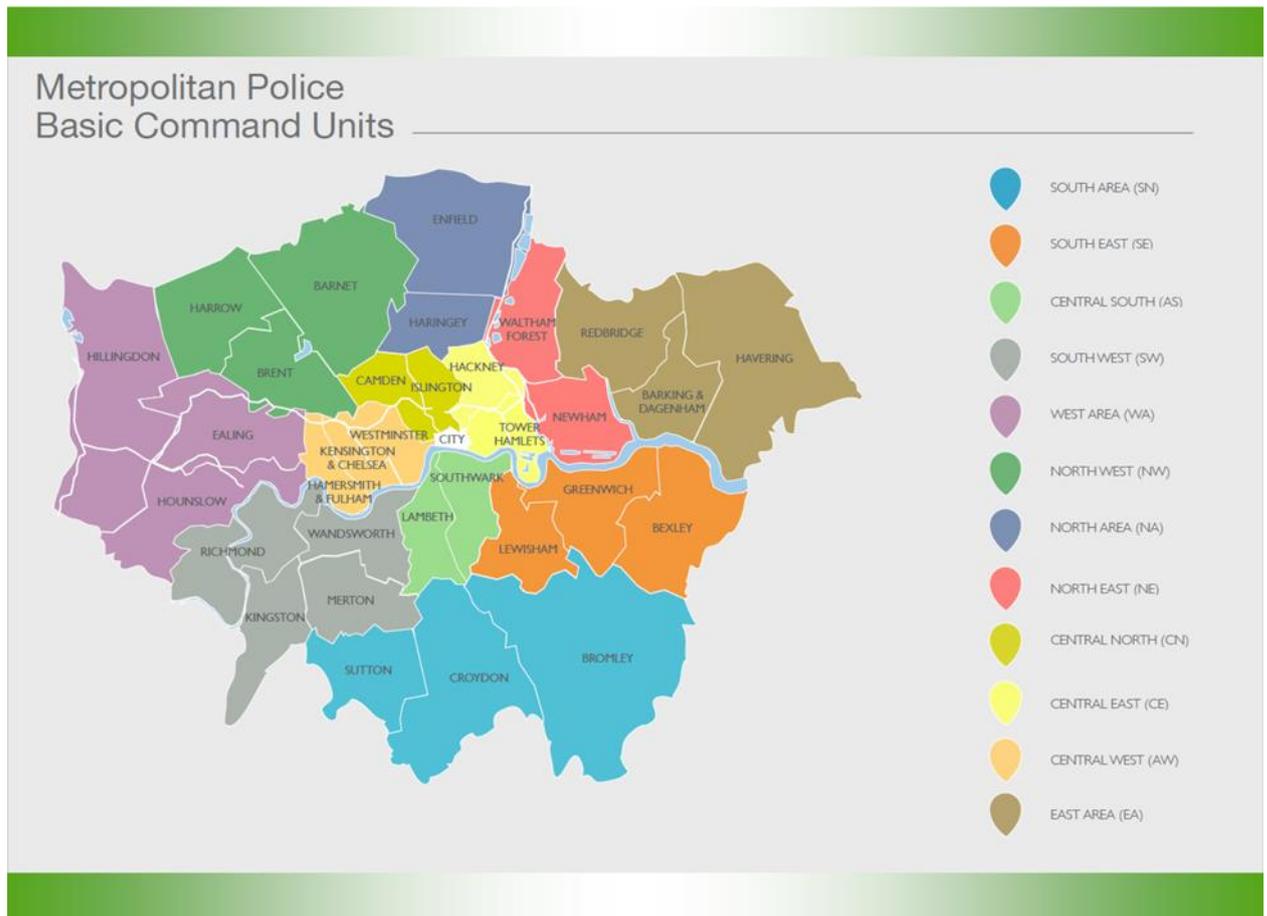
The results show a significant increase in the probability of being a victim of domestic abuse during lockdown which varies by gender, age group and

ethnicity of the victim, with some groups experiencing larger increases after lockdown than others. We also show that the increase is homogenous across the lockdown period, declining only when lockdown restrictions are eased but levels of abuse do not return to their pre-lockdown levels up to 3 months later after lockdown is lifted.

The data

The data used in this analysis come from the Crime Reporting Information System (CRIS) used by the Metropolitan Police Service (MPS) to record all crimes within London. The areas covered by the MPS can be seen in Figure 1, which shows the 32 London boroughs and the 12 Basic Command Units of the Metropolitan Police.

Figure 1: The map of the London Metropolitan Area and Boroughs within each BCU



(Source – London Metropolitan Police)

The Metropolitan Police define domestic abuse as an incident or pattern of different events from a person that are seen as “controlling, coercive or threatening behaviour, violence or abuse” (Met, 2020). The offence has to be committed by an intimate family member (husband/wife/partner). The type of domestic abuse one suffers comes in many different forms and is not limited to just physical abuse. It includes: Controlled behaviour where a victim is made to feel dependent or subordinate to their partner, which can be created through isolation, exploitation, deprivation and regulating victims’ everyday normalities; coercive behaviour involving patterns of behaviours, including acts of violence,

humiliation and threats or any other form of abuse that can terrify or harm the victim; psychological or emotional abuse.

Crimes can be reported in a number of ways⁶ and are recorded as crimes by the responding officers. The data are recorded crimes, by the day, by crime type, by London Borough, and for the majority of observations, by the ethnicity, gender and age of victim. These population level data, measured over time, ensure high external validity and give us confidence that our results are generalisable. Within the data we examine there are various types of crimes that are recorded as domestic abuse. Table 1 shows the domestic abuse crimes recorded in the 12 weeks of lockdown and the 11 weeks prior to that,⁷ by type of offence. During this period there were 281,223 offences reported in all, of those 40,118 or 14.3 percent were recorded as domestic abuse incidents. The results show that although the numbers across all crime types look higher in the lockdown period, the types of offence, as a percentage of all domestic abuse crimes, are similar across both periods. In both periods the majority of domestic incidents (87%) are violent crimes, with common assault accounting for 26 percent of all domestic crimes in the 11 weeks prior to lockdown and 28 percent in the lockdown weeks, closely followed by assault with injury (accounting for 21% and 23% across the two time periods) and harassment (23% and 20% across the two time periods).

⁶ CRIS reports can come from: 1) Automated alarm message to police (covers all alarm calls); 2) Reports direct to officer on duty and away from police building; 3) reports by person calling at police building; 4) discovered by police (i.e come across a shop lifter whilst out on duty); 5) Online reporting; 6) Reports to police by social services; 7) reports to police by school/education authority; 8) reports to police by dr/hospital; 9) Any report from Health Clinic sexual assault unit; 10) Reports by means other than above (letter/fax etc); 11) Phone call to police (999/101); 12) Report by email; 13) Crime transferred in from another force; 14) Reports received from third party report sites; 15) Reports to police by fire brigades.

⁷ Chosen to avoid the Christmas period.

Table 1: Numbers of domestic abuse crimes by type in lockdown compared to the 11 weeks prior to that.

	11 weeks prior to lockdown Numbers (As % of all DA crimes)	Lockdown period Numbers (As % of all DA crimes)
By Offence		
<i>Violent</i>		
Common Assault	4468 (26.28)	6410 (27.71)
Assault with Injury	3518 (20.70)	5287 (22.85)
Harassment	3855 (22.70)	4612 (19.94)
Serious Wounding	1282 (7.55)	1761 (7.61)
Other Violence	900 (5.30)	1238 (5.35)
Rape and other sexual offences	727 (4.28)	759 (3.28)
Arson	15 (0.09)	44 (0.19)
Murder	4 (0.02)	5 (0.02)
<i>Non-violent</i>		
Criminal Damage	1028 (6.05)	1597 (6.90)
Theft	847 (4.99)	1052 (4.55)
Burglary	178 (1.05)	189 (0.82)
Other	168 (0.99)	179 (0.77)
Total	16,985 (100.00%)	23,133 (100.00%)

Methodological approach

Our hypothesis is that domestic abuse is likely to have risen during the lockdown period. To test this, we employ a before and after approach. In this framework, the probability of being a victim of domestic abuse in the weeks

during the Covid-19 lockdown is compared to the 11 weeks prior to lockdown. If the research hypothesis is correct, we expect to see an increase in domestic abuse after March 23rd.

The model takes the simple form of:

$$\Pr (Y=1)_{it} = \beta_t(\text{lockdown}) + \varepsilon_{it}$$

Where Y is the probability of being a victim of domestic abuse, β_t is a dummy indicating the lockdown period, compared to a base which is the period prior to lockdown. This initially starts as the 11 weeks prior to lockdown, but is then expanded to 4, 8, 12, 16, 20 and 24 week comparison windows as robustness checks. This coefficient essentially encapsulates the effect of lockdown on the probability of being a victim of domestic abuse, or the causal impact of Covid-19 lockdown on domestic abuse as long as there is nothing else going on at the same time that would impact on the incidence of domestic abuse, a matter we discuss in more detail below. What we are looking for is whether the coefficient is positive and significant in the lockdown period and the size of the effect; indicating that domestic abuse rose after lockdown (and by what amount).

The analysis controls for a range of factors that may account for any differences in domestic abuse. The CRIS data, in most cases, has the ethnicity, gender and age of victim, which are added to the models to control for victim characteristics. Additionally, area level controls are added in the form of dummies for the 12 Basic Command Unit areas.⁸ These are essentially, area

⁸ The 12 areas are: "Central East" 2 "Central North" 3 "Central South" 4 "Central West" 5 "East Area" 6 "North" 7 "North East" 8 "North West" 9 "South" 10 "South East" 11 "South West" 12 "West Area". We aggregate to this level for the area controls as there are too few hate crimes to analyse the data at Borough level.

fixed effects, controlling for unobservable factors that may impact upon domestic abuse within an area, but do not vary or vary very minimally across time.

While the external validity of our approach is high, like all before and after analyses, where there is no control group, the internal validity of our results, or our ability to interpret our results in a causal way, may be weakened by things that are happening at the same time as lockdown which offer possible alternative explanations for our observed results. In this case, despite the fact that we are looking over a relatively short period of time, there are a few possible sources of threat. The first is that domestic abuse may be seasonal so any increases we see over the lockdown period, may occur every year over the same period. To deal with this threat we set up a placebo test, examining the same time frame the year before, when no lockdown was in place. This ensures that any differences that are found over the lockdown period are not the result of seasonal trends in domestic abuse, but are in fact a result of the national Covid-19 lockdown.

A second potential threat to internal validity comes from the possibility that during lockdown police resources or focus shifted from other crimes towards domestic abuse. In this case any rise in domestic abuse crimes would be attributable to an increase in police targeting domestic abuse rather than a genuine increase in domestic abuse. But the Metropolitan Police did not have a shift in policy towards domestic abuse over the lockdown period. So, this is unlikely to challenge the internal validity of our analysis. However, lockdown did see a decline in a number of types of crime including theft and burglary, which have a high offence count and are little associated with domestic abuse (see

Table 1), which produced a reduction of around 4,500 crimes of these types by June 2020, compared to March 2020. This is unlikely to have been totally offset by the increase in the types of crimes that increased over lockdown such as drugs offences and public order offences (which combined produced an increase of around 2000 crimes of this type by June 2020 compared to March 2020 in London). So we cannot fully rule out police being better able to respond to domestic incidents due to less demand on their time in other areas.

Finally, a third and related threat comes from the fact that during lockdown more people were at home which could lead to an increase in calls to the police about domestic abuse incidents from neighbours. Ivandic et al. (2020) show that lockdown saw an increase in calls about domestic abuse in London. The majority of the increase was an increase in calls by third parties. In this analysis we are looking only at domestic abuse crimes here, and while calls about domestic incidents may increase with more people at home this does not necessarily lead to more recorded domestic abuse crimes. From January 2020 to August 2020, the Metropolitan Police received just over 50,000 calls from third parties about domestic abuse and just under 50,000 calls from victims of domestic abuse. Of the calls made by a third party only 17 percent end up recorded as domestic crimes, compared to 30 percent of calls made by victims.

Having reduced the threats to internal validity of our approach, after testing whether lockdown is associated with an increase in domestic abuse in general the second part of the analysis adds interactions to our models to allow the impact of the lockdown period to vary by the characteristics of the victim. This tells us whether the impact of lockdown was felt more heavily amongst certain groups. We focus on sex, age group and ethnic group differences as

well as differences in offence type. Then using an event type approach, we move from a single before and after to an examination of trends by week to examine whether the impact of lockdown varies over the duration of lockdown and what happens after lockdown restrictions are eased.

Results

To examine whether the impact of the national lockdown led to an increase in domestic abuse Table 2 shows the average marginal effects of a probit model examining the probability of being a victim of domestic abuse in during the 12 weeks of lockdown, compared to the 10 weeks before. The coefficient for the lockdown period shows that there is a positive significant relationship, indicating that individuals are 6.8 percentage points more likely to be a victim of domestic violence during lockdown compared to the weeks before, with the probability of being a victim of domestic abuse increasing from 11.1 percent to 17.9 percent during lockdown.

Table 2: Average Marginal effects on the probability of being a victim of domestic abuse before and after the Covid-19 lockdown

<i>After (23 March – 15 June 2020)</i>	
<i>Before(7 Jan 2020 - 23 March 2020)</i>	AME (dy/dx)
Lockdown	0.068*** (0.001)
<i>N</i>	269,648
<i>Pseudo R-Squared</i>	0.0115

Notes: Coefficients are a dummy variable for the lockdown period compared to the period prior to lockdown. They are the average marginal effects from a probit model. Robust standard errors are in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

As crime tends to be cyclical, we want to make sure that the rise we are seeing in domestic abuse during the lockdown period is not just the result of the time period we are comparing it to. Therefore, Table 3 shows the results of the same model as Table 2 but this time with the before period measured in different ways, increasing in 4 week increments from the lockdown date. Column one

compares the lockdown period to 4 weeks prior to lockdown, column two uses the 8 weeks before lockdown, column three the 12 weeks prior, column four 16 weeks prior, column five 20 weeks and column six 24 weeks prior to lockdown as the comparison group. The results are remarkably consistent, showing between 6.5 and 6.9 percentage point increase in the probability of being a victim of domestic abuse during lockdown compared to the various measures of the before period.

Table 3: Average Marginal effects on the probability of being a victim of domestic abuse after the first Covid-19 lockdown compared to 4 to 24 weeks prior to lockdown

	Lockdown period compared to base of:					
	4 weeks prior	8 weeks prior	12 weeks prior	16 weeks prior	20 weeks prior	24 weeks prior
Probability of being a victim of DA in lockdown	0.065*** (0.002)	0.067*** (0.001)	0.066*** (0.001)	0.066*** (0.001)	0.068*** (0.001)	0.069*** (0.001)
<i>N</i>	181,066	241,484	295,765	352,468	412,829	473,157
<i>Pseudo R squared</i>	0.0079	0.0109	0.0106	0.0104	0.0106	0.0103

Notes: Coefficients are a dummy variable for the lockdown period compared to different pre period comparisons, each comparison period is modelled separately. They are the average marginal effects from a probit model. Robust standard errors are in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Adding demographic controls with crime and area fixed effects:

The results show the probability of being a victim of domestic abuse increased over the lockdown period compared to all earlier time periods examined.

However, so far we have not included in our models any controls for other things that might affect the relationship of interest. Therefore, similar to Table 2, Table 4 uses the 11 weeks before lockdown as the base and displays the

results for the 12 weeks of the first national lockdown. Though this time, the model controls for a range of other factors: Model A controls for the demographics of the victim and accounts for the sex of the victim, their age and ethnicity as previous research has shown that domestic abuse victimisation is likely to occur differentially across these groups (The Global Fund for Women, 2005; Gill et al., 2012). Model B controls for the area in which the crimes occurred. Adding area dummies for the 12 BCUs allows us to take account of factors that are different across areas but that remain constant, or almost constant (as we are looking at such a short period) across time, for example, the fact that some areas of London always have higher crime rates than others. In model C, dummies are added to account for crime type as we showed in Table 1 certain crimes are more associated with domestic abuse than others. All the controls are displayed together in Model D, which also includes interactions between all the control variables and the after period. This allows the association between the control variables and our outcome to vary before and after lockdown.

Without the controls the previous results show around a 7 percentage point increase in the probability of being a victim of domestic abuse during lockdown, irrelevant of the base period examined. Including the controls reduces the coefficients by varying measures. Including area controls (model B) has the least effect on the magnitude of the coefficient of interest, which remains at 6.3 percentage points and only accounts for 2 percent of the variation in our outcome. Including the demographic information on victims (model A) decreases the initial 7 percentage point increase we were seeing in the probability of being a victim of domestic abuse over lockdown by slightly

more, with the increase now at 5.8 percentage points. This model accounts for around 15 percent of the variation in probability of being a victim of domestic abuse. Including crime type cuts the post lockdown increase further to 3.2 percentage points and accounts for more variation in the outcome (20%). The final model, which includes all control variables along with interactions between them and the after period again slightly reduces this coefficient to 2.7 percentage points and accounts for just under 30 percent of the variation in the outcome.

Table 4: Average marginal effects of being a victim of domestic abuse during lockdown, whilst controlling for victim and area as well as shifting crime patterns before and after lockdown

	AME (dy/dx)			
	Demographics	Area Controls	Crime Type	All controls (Incl. interactions)
	A	B	C	D
Lockdown	0.058*** (0.001)	0.063*** (0.001)	0.032*** (0.001)	0.027*** (0.001)
Demographics	Yes	No	No	Yes
Area Controls	No	Yes	No	Yes
Crime controls	No	No	Yes	Yes
All 2 way interaction ³ between controls and lockdown period	No	No	No	Yes
N	269,648	269,648	269,648	269,648
Pseudo R-Squared	0.149	0.021	0.204	0.291

Notes: The coefficient is a dummy variable for the lockdown period compared to the 10 weeks prior to lockdown (to exclude the Christmas period). They are average marginal effects from a probit model. The controls are gender of victim, ethnicity, age of victim, 12 BCU's, crime type and interactions between each control and the after period. Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Previous year placebo test

The results so far suggest that even after controlling for victim demographics, area and crime fixed effects and allowing all control variables to interact with the lockdown period there is a small positive impact of the Covid-19 first national lockdown on domestic abuse. However, we are also aware that crime is seasonal. So there remains a possibility that the positive results shown during the lockdown period is actually reflecting a seasonal trend, rather than a genuine increase in domestic abuse resulting from lockdown. To test this, we run a placebo test, the same model as Table 4, with full controls, this time though for the same time period the previous year, when Covid-19 did not exist and the country was not in a national lockdown. The results, displayed in Table 5, show a very slight decline in the probability of being a victim of domestic abuse over the period examined, although this is only statistically significant in one of the models. Thus, we are confident that the increase in domestic abuse during the first national lockdown in 2020 is a direct result of the Covid-19 lockdown rather than some seasonal trend.

Table 5: Average marginal effects of being a victim of domestic violence in the year prior to Covid-19, controlling for victim and area demographic and crime and area fixed effects

	AME (dy/dx)			
	Victim Demo	Area Controls	Crime Type	All controls (incl. Interactions)
	A	B	C	D
Placebo Lockdown	-0.002 (0.001)	-0.004** (0.002)	-0.003** (0.002)	-0.002 (0.002)
Victim Demographics	Yes	No	No	Yes
Area Controls	No	Yes	No	Yes
Crime controls	No	No	Yes	Yes
All 2 way interaction ³ between controls and lockdown period	No	No	No	Yes
<i>N</i>	144,919	144,919	144,919	144,919
<i>Pseudo R-Squared</i>	0.145	0.019	0.194	0.297

Notes: The coefficient is a dummy variable for the 5 weeks before lockdown date and the 5 weeks after. This is a more restrictive time period than the initial analysis, but unfortunately we do not have the full corresponding data for the previous year. Controls – as for Table 4. Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Do all types of domestic abuse crimes increase during lockdown?

We have already seen the importance of controlling for crime type and the changing patterns of crime over lockdown. For obvious reasons lockdown saw a decline in crimes such as theft and burglary while others such as drug related crimes and public disorder offences increased during lockdown (BBC, 2020b; Kirchmeier and Villa Llera, 2020). In this section we examine the probability of being a victim of specific types of domestic abuse within the key crime types that were identified in Table 1⁹ as those most associated with domestic abuse both before and after lockdown. To do this we

⁹ Murder and arson are not included as the number of these types of domestic abuse crimes were too low to analyse.

display coefficients that are average marginal effects from an interaction term between each type of domestic abuse crime and the lockdown period from the same model that was used for the final specification in Table 4. The coefficients are thus interpreted as the movement in the predicted probability of being a victim of each type of domestic abuse crime, and measured in the usual way in percent point terms. What we are interested in is whether all crime types have coefficients of a similar magnitude, indicating that the increase in domestic abuse was similar across all domestic abuse offences, or whether the coefficients vary, indicating the rise in domestic abuse is associated with some offences more than others. What we can see from column 1 in Table 6 is that the most violent categories of domestic abuse were the ones that saw the largest increases during lockdown, the probability of being a victim of domestic abuse related assault with injury increased after lockdown by nearly 8 percentage points, common assault by just over 5 percentage points and serious wounding by 4.3 percentage points.

We can compare these increases to the movement in the probability of being a victim of these same offences in general after lockdown by comparing column 1 to column 2. When we do this, we can see even in instances where the increase in domestic abuse looks relatively low such as rape and sexual offences the small post lockdown rise in domestic abuse related rapes and sexual offences contrasts to the lack of increase in these types of offences in general. For domestic abuse related theft and burglaries, the very small increases in domestic violence related offences contrast to the general downward trend in these offences in general post lockdown, which saw thefts decrease by around 12 percentage points and burglary by just under a 2 percentage points.

Table 6: Average marginal effects of being a victim of domestic abuse for each type of crime after lockdown (with full controls)

Offence	AME (dy/dx)	
	Probability of being a victim of domestic abuse for each type of crime after lockdown	Probability of being a victim of each type of crime after lockdown for everyone ¹⁰
<i>Violent</i>		
Common Assault	0.051*** (0.005)	0.029*** (0.001)
Assault with Injury	0.077*** (0.006)	0.019*** (0.001)
Harassment	-0.000 (0.004)	0.053*** (0.001)
Serious Wounding	0.043*** (0.008)	0.007*** (0.001)
Other Violence	0.004 (0.009)	0.012*** (0.001)
Rape and other sexual offences	0.024*** (0.007)	0.001 (0.001)
<i>Non-violent</i>		
Criminal Damage	0.044*** (0.005)	0.012*** (0.001)
Theft	0.021*** (0.001)	-0.123*** (0.002)
Burglary	0.007*** (0.002)	-0.016*** (0.001)
Full Controls	Yes	Yes
<i>N</i>	269,648	269,648
<i>Pseudo R squared</i>	0.292	0.027-0.138

Notes: The coefficients in column 1 are interaction terms between crime type and the after period and are average marginal effects from a probit model that includes a full set of controls. The coefficients in column 2 are the average marginal effects of being a victim of that type of crime in general in the lockdown period. The models are run separately for each crime type, which is why there is no one Pseudo R squared value but a range. All models include a full set of controls for gender of victim, ethnicity, age of victim, 12 BCU's, crime type and interactions between each control and the after period. Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

¹⁰ Includes both domestic abuse and non domestic abuse victims

Which populations were most affected by the increase in domestic abuse due to lockdown?

Having established a link between lockdown and an increase in domestic abuse and having shown that this increase was not homogenous across all types of domestic abuse offences, we now turn our attention to examine whether the increase was experienced homogeneously across different populations. We already know that certain populations are more likely to be victims of domestic abuse in non-crisis situations and that in crisis situations these groups are the most affected by increases in violence (Phillips et al., 2009; Dasgupta et al., 2010) which leads us to expect that the impact of the lockdown will have been experienced differentially across different populations, with the most vulnerable groups seeing a greater increase than other groups. This is exactly what the analysis finds: Based on the full model in Table 4, Table 7 shows the coefficients of the interactions between the demographic characteristics and the lockdown period, showing the predicted probability of being a victim of domestic abuse during lockdown compared to the previous period for each population group. The results show that, as hypothesised, some groups experience a larger increase in the probability of being a victim of domestic abuse after lockdown than others. Women, who already experience more domestic abuse than males, experience a greater increase after lockdown (almost 4 percentage point increase compared to the 1.6 percentage point increase experienced by males). When we look at the different age groups, we see the largest rise is amongst younger people (16-21) and older people (70+). Both of these groups see just over a 4 percentage point increase in the probability of being a victim of domestic abuse during lockdown. For other age groups the corresponding rise is around a 2 percentage points. When the ethnicity of the victim is examined, Asians and those of Arab and Middle Eastern ethnicity see the

largest increase in the probability of being a victim of domestic abuse during the first national lockdown, with an increase of around 6 percentage points compared to a rise of 3.7 percentage points for Black people and 2.7 percentage points for white people.

Table 7: Average marginal effects of being a victim of domestic abuse after lockdown, by victim demographics (with full controls)

Demographic variables	AME (dy/dx)
<i>Gender</i>	
Female	0.039*** (0.002)
Male	0.016*** (0.001)
<i>Age</i>	
<=21	0.041*** (0.002)
22-29	0.024*** (0.003)
30-39	0.026*** (0.002)
40-49	0.018*** (0.003)
50-59	0.022*** (0.003)
60-69	0.015** (0.006)
70+	0.042*** (0.007)
<i>Ethnicity</i>	
Black	0.037*** (0.004)
Arab/Middle Eastern	0.060*** (0.010)
Asian	0.056*** (0.004)
White	0.027*** (0.002)
Full controls	Yes
<i>N</i>	269,648
<i>Pseudo R²</i>	0.292

Notes: The coefficients are average marginal effects from a probit model that includes a full set of controls for gender, ethnicity and age of victim, 12 BCU's, crime type and interactions between each control and the after period. Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

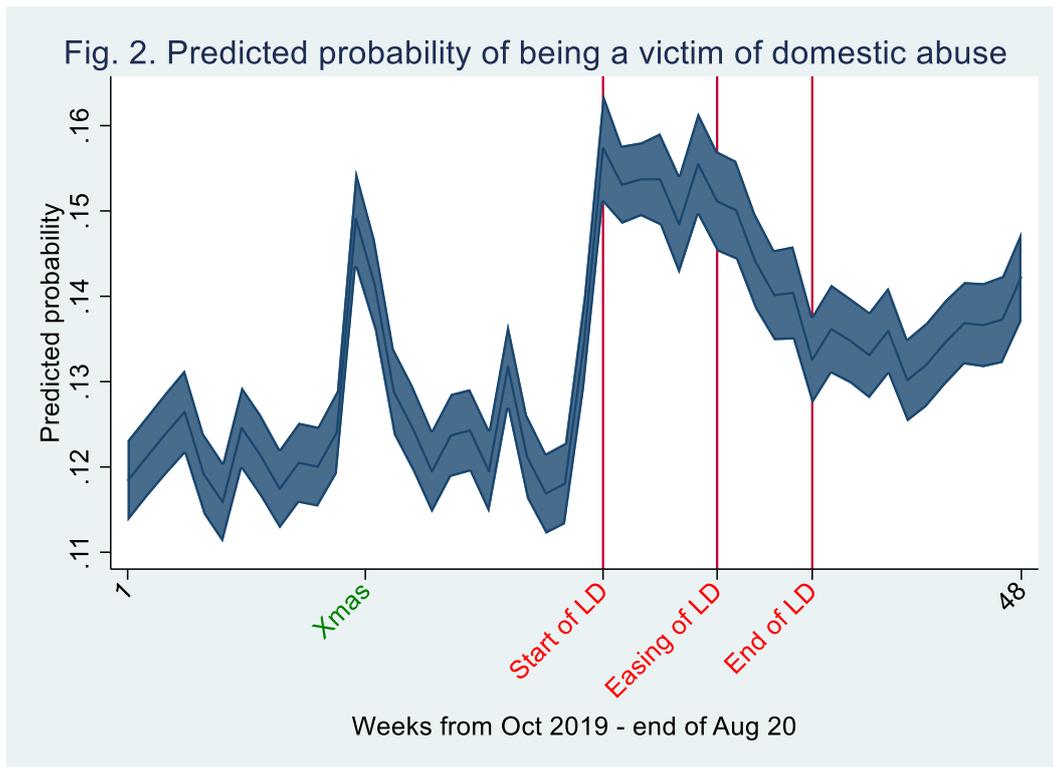
Allowing for heterogeneity in the lockdown period and beyond – an event study approach

So far the analysis has only considered the impact the first national lockdown had on the probability of being a victim of domestic abuse before and during the lockdown period. In the final part of the analyses we turn our focus to whether the increase we have seen in domestic abuse in the lockdown period is homogenous across the whole lockdown period or whether domestic abuse increases with the duration of lockdown, before turning our attention to what happens after lockdown restrictions are eased on May 10th (when people were allowed to return to work and take unlimited exercise) and finally when lockdown restrictions are fully lifted on June 15th (when non-essential shops and primary schools were re-opened). We might expect that once lockdown restrictions are eased, then finally lifted, the incidence of domestic abuse will return to the levels seen prior to lockdown. However, research looking at the impact of terrorist acts on hate crimes shows that hate crimes increase after terrorist acts and do not return to lower levels for long periods afterwards (Ivancic et al., 2019) and research on Covid-19 shows hate crimes against Chinese people increased and remained at high levels 8 months after Covid-19 first emerged (Gray and Hansen, 2020). So, following on from this, we may expect domestic abuse levels to remain higher after lockdown: As whilst the people have freedom to leave the house, the structural stresses and fears associated with the pandemic may still remain.

Both of these aspects are considered in Figure 2 which plots the predicted probability of being a victim of domestic abuse by week from October 2019, prior to Covid-19, into 2020 when Covid-19 emerged, through the first

national lockdown, and beyond its removal through to the end of August 2020. The graph shows no significant movement in the predicted probability of being a victim of domestic abuse prior to lockdown; remaining steadily around 12 percent (with the exception of a rise over the Christmas period to around 15 percent in line with evidence from Taub (2020)). In the week before lockdown the probability increases to around 14 percent, which coincides with the week Boris Johnson began his daily Covid-19 press briefings on 16th March urging everybody in the UK to work from home and avoid pubs and restaurants prior to the formal lockdown command on the evening of March 23rd. There is a further significant increase as we move into the first week of lockdown to around 16 percent, with the probability staying between 15-16 percent, similar to the probability of being a victim of domestic abuse over the Christmas period for the duration of lockdown.

As soon as lockdown is eased the predicted probability of being a victim of domestic abuse declines slightly dropping to 13 percent by the end of lockdown. However, it remains around 13-14 percent, slightly higher than the probability experienced prior to lockdown which was just under 12 percent. A similar picture emerges if we look at this by gender, age and ethnicity (not shown). With the exception of the Christmas period, the predicted probability of being a victim of domestic abuse remains relatively stable until just prior to lockdown when it starts to rise and remains significantly higher throughout lockdown, declining with restrictions are eased somewhat but remaining slightly higher 3 months after lockdown than prior to lockdown.



Conclusion

This paper set out to test whether the first UK Covid-19 national lockdown (between March 23rd and June 15th 2020) led to an increase in domestic abuse in the London Metropolitan area. Using a before and after approach we examined whether domestic abuse was higher during lockdown than it was before and showed that even after controlling for other factors associated with differences in domestic abuse and comparing to a variety of baselines there is a significant rise in recorded domestic abuse crimes during lockdown, when the probability of being a victim of domestic abuse increased, by around 3 percentage points, on average. When we ran a placebo test for the year prior to Covid-19 and lockdown we found no similar significant increase in domestic abuse, giving us confidence that the increase we found was a result of the national lockdown and not some seasonal trend.

The results indicate that the increase in domestic abuse is greater for some groups than others with women, the youngest age group and older people

experiencing higher increases in the probability of being a victim of domestic abuse during lockdown than others. Increases were also higher for people of Asian, Arab and Middle Eastern ethnicity, who saw increases of around 6 percentage points in their predicted probability of being a victim of domestic abuse during lockdown. Finally, of the domestic abuse related crimes, it was the most violent crimes that saw the greatest increase during lockdown.

When we allowed the lockdown period to have a different impact on domestic abuse across the duration of lockdown we found the rise in domestic abuse to be consistent across the entire lockdown period, declining only when lockdown was eased in May. Examining the later months, through lockdown and beyond, the results showed that the probability of being a victim of domestic abuse remained higher than pre-lockdown rates, indicating lockdown has had an enduring effect on domestic abuse beyond the immediate lockdown period for all groups. The probability of being a victim of domestic abuse remained slightly higher than the pre-lockdown levels 3 months after lockdown ends.

The findings portrayed in this paper are consistent with previous research that suggests domestic abuse cases often rise after major incidents (Dobson, 1994; Domeisen, 1998; Fothergill, 1998; Connell, 2002; Chew and Ramdas, 2005; Klein, 2008; Anastario et al., 2009; Dasgupta et al., 2010). Like this work our research has shown that the people that are most at risk are the most vulnerable, women, the young and the old and certain ethnic groups.

Unfortunately, we are unable to elaborate on is what it is about lockdown that leads to the increase in domestic violence. The fact that domestic abuse starts to increase a week before lockdown is instigated may indicate that it is the rise in other stressors related to the wider Covid-19 situation that are dominant factors, rather than the confinement itself. The fact that domestic abuse does not increase with the

duration of confinement and does not quickly revert to pre-lockdown levels may also speak to this interpretation. On the other hand, the start of the rise the week before lockdown which ties in with the start of Boris Johnson's daily press briefings may reflect an anticipation effect, with people beginning to confine their movements prior to the formal lockdown decree confinement which leads to a small increase in domestic abuse almost immediately, which continues to increase over the first week of lockdown. The fact that domestic abuse starts to decline as soon as lockdown conditions are eased in May rather than formally lifted in the middle of June may reflect that confinement is the major driver behind the results we have presented here.

Despite our inability to elaborate on the underlying mechanisms at work here the results we present produce a clear message for policy makers: When instituting policies aimed at alleviating one problem there is a careful need to think through the implications the policy might have elsewhere. In this case a policy aimed at reducing the spread of the pandemic, its associated health risks and alleviating pressure on the NHS had unintended negative consequences for domestic abuse. In most cases of pandemics or other major incidents these policies will be emergency measures that have to be taken, but there needs to be more consideration for what this means for already vulnerable groups and the possibility of an increase in domestic abuse needs to be factored into any plans at the outset. In this case the UK government's overall pandemic plan which was published on March 3rd, includes no discussion of domestic abuse (Department of Health and Social Care, March 3, 2020) and the National Oversight Group on Domestic Abuse, a cross-party advisory group, did not meet prior to or during lockdown. Indeed, the UK government only commissioned its first strategic action plan for addressing domestic abuse in late May 2020, two months into lockdown. Even at this stage, the report suggested that that violence against women and girls was not a key part of the response to the pandemic (New York Times, April 2020). Other countries, such as New Zealand, were seen as having a more proactive

response to the inclusion of domestic abuse planning in their Covid-19 response (New York Times, April 2020).

Any policy discussion around this area must include maintaining or even expanding provision for victims of domestic abuse in times of crisis rather than them being reduced due to repurposing as they have been in some instances during the current pandemic. This may include increasing staff or provision to hotlines and outreach centres; providing resources for victims even in lockdown situations, as well as increasing communication and awareness of these services. In lockdown situations there is a case for making sure one-stop centres remain open and that counselling and support groups continue to function. Where they are shut down, they need to be replaced with virtual options that address inequalities in access to technology (Peterman et al. 2020).

Our results have shown that the increase in domestic abuse was not consistent across all groups or populations. Reflecting existing inequalities, women, the young and older populations and those of certain ethnic groups saw larger increases in the probability of being a victim of domestic abuse during lockdown than other populations. This means that policy response needs to take into account these differences, targeting those most in need. Specialist provision may be needed for children, as they are unlikely to have access to the same outreach resources as adults (Yaker and Erskine, 2020). Likewise, it may take specialist intervention to reach other vulnerable groups identified in this paper, such as those over the age of 70 and those of Asian and Arab and Middle Eastern ethnicity.

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